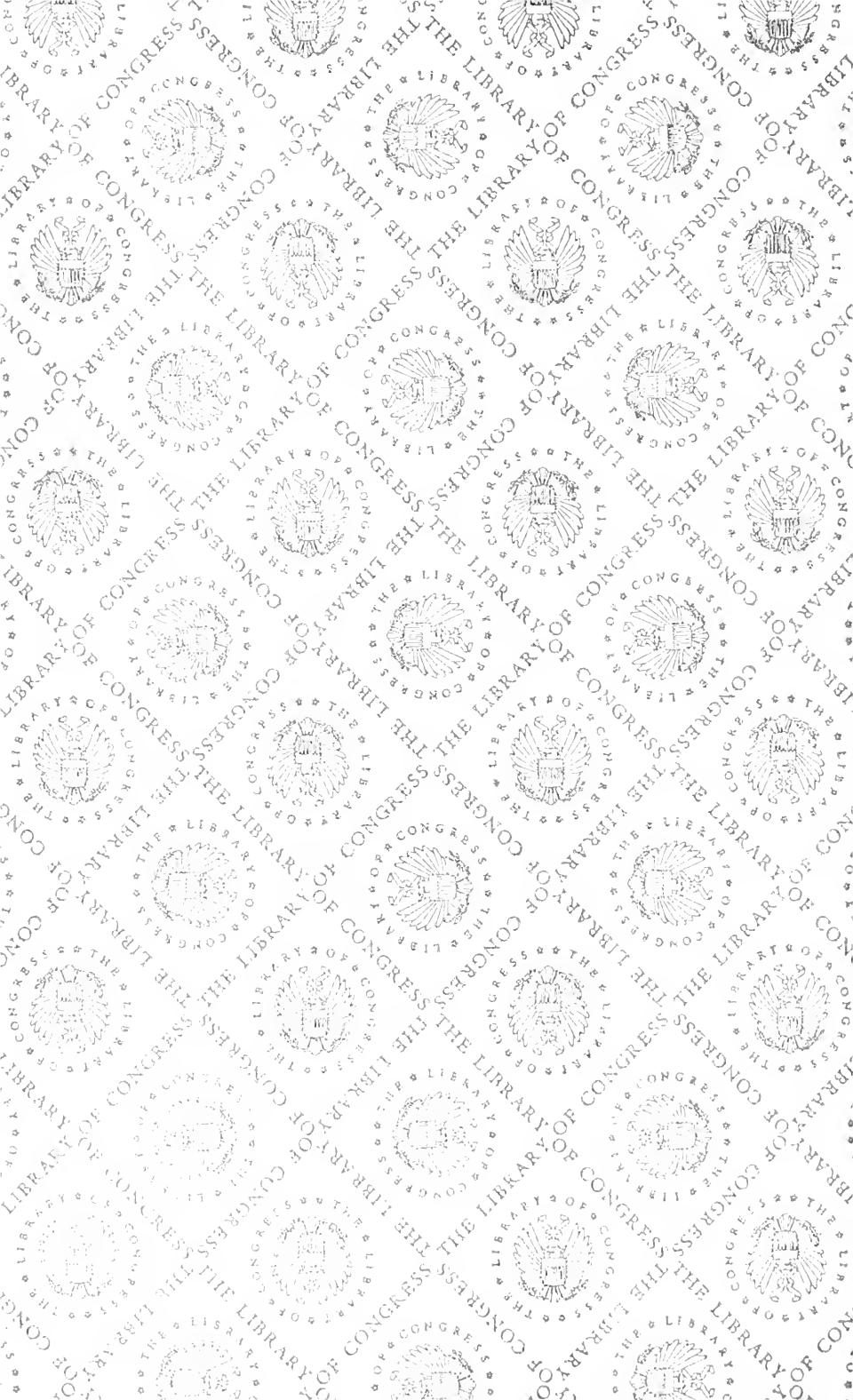
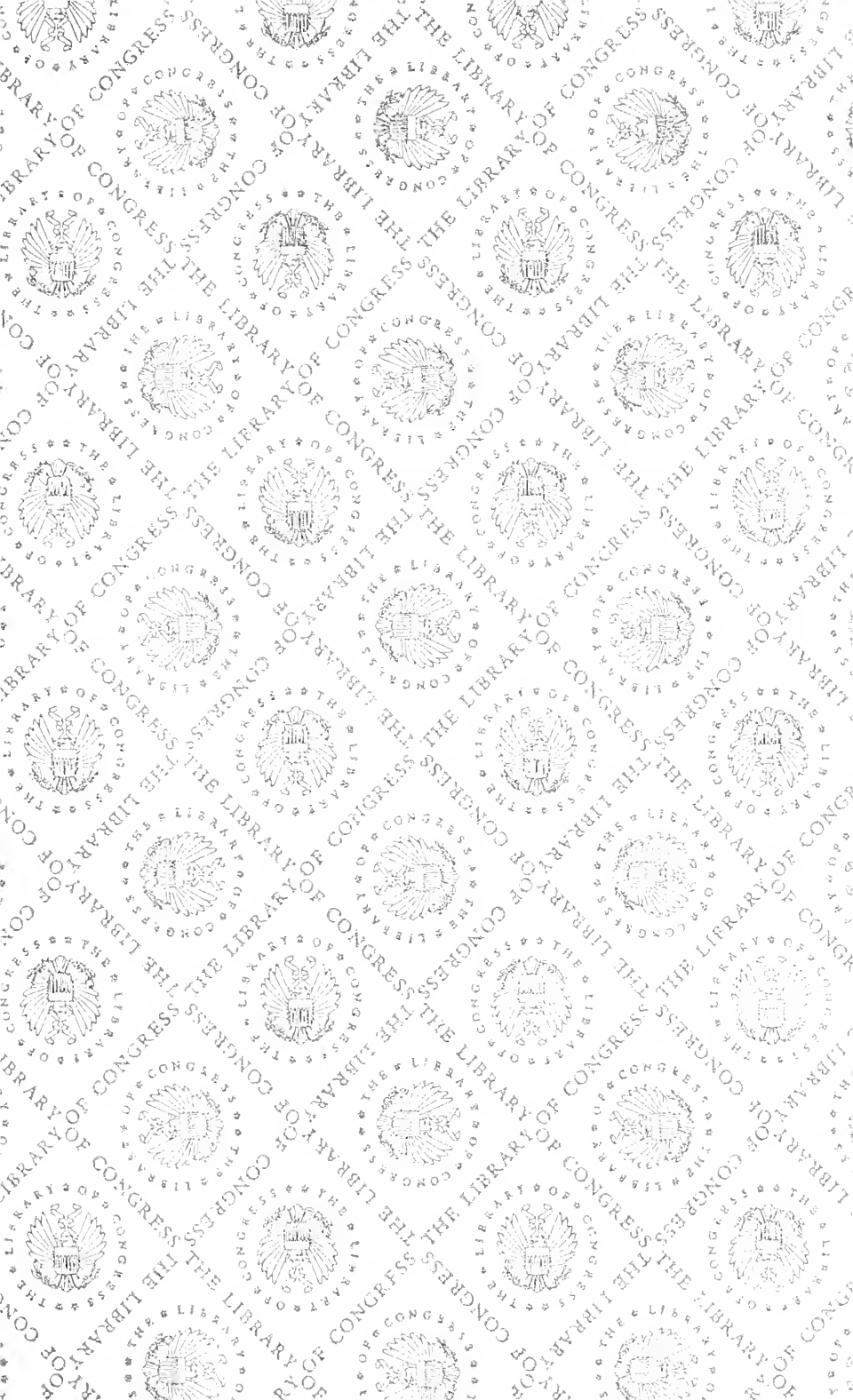


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1859







E. L. Sanborn.

AN

ADDRESS,

IN COMMEMORATION OF THE COMPLETION

OF THE

FIRST FREE BRIDGE!

ACROSS

CONNECTICUT RIVER,

BY

Prof. E. D. SANBORN.

..

TOGETHER WITH A REPORT OF THE PROCEEDINGS AND REMARKS OF

Dr. BOURNES, Dr. CROSBY, Prof. PATTERSON,
and Wm. H. DUNCAN, Esq.

JULY 1st, 1859.

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ADDRESS, ETC.

On the first day of July, 1859, a large and highly respectable audience, composed of citizens of Norwich and Hanover, with the Students of Dartmouth College and Norwich University, gathered in the College Church at 3, P. M., to celebrate the completion of the first Free Bridge over the Connecticut River. The exercises were opened by a voluntary from the choir, and an appropriate prayer by the Rev. Dr. Bournes. After which, Prof. Dixi Crosby, President of the meeting, arose and addressed the assembly as follows :

FELLOW CITIZENS :—I prefer this form of salutation from its associations—for with it is connected the idea of every place and every occasion, where freemen meet for an open expression of opinion—for a mutual interchange of thought and for counsel, how the greatest strength may result from the most perfect union. The School District—the Town—the County—the State—and the Federal Whole are all indicated and with it the idea of that *perfect union* we are to-day met to consecrate and in honor of which our nation's flag is so proudly waving from yonder staff.

There occur in the history of every town, every State, and every nation—certain epochs pregnant with good or fraught with danger—which demand public recognition from the people, and it is one of the former we are to-day met to celebrate.

I hold it to be improper upon this occasion to enter upon any comparison of the relative merit due to those individuals who have labored to accomplish so desirable a result. To say whose

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services might have been dispensed with, or without whose aid the project might have failed, would, upon this occasion and in this presence, be out of place. It is sufficient that a public work has been accomplished, which is of vital importance to us all. And if during the long, weary years of our probation, the magnitude of the undertaking has at any time created a corresponding warmth of feeling and opinion, and if any have felt aggrieved or have "set down aught in malice," let this day's proceedings be regarded as the funeral service of all such sentiments, and the resurrection day of that neighborly kindness and town friendship, which was not dead, but only slept.

But I will no longer detain you, but beg the privilege of introducing the historian and orator of the occasion, Prof. E. D. SANBORN.

Prof. Sanborn rose amid the enthusiastic applause of the audience, and delivered the following admirable address, which was listened to with profound attention, and only interrupted by the frequent cheering with which his pertinent hits and eloquent periods were received :—

FELLOW CITIZENS : — A work has been completed. A duty has been performed. A conflict has been waged. A victory has been won. The work whose completion we celebrate, to-day, cannot be compared with the pyramids or the ponderous architecture of the valley of the Nile ; but it is infinitely more useful than the temples of Karnac, Edfou and Dendera or those towering monuments that keep perpetual watch and ward on the borders of the great desert, on whose rock-hewn sides time has traced, in mystic lines, the history of forty centuries. The Egyptians were famed for their wisdom. They led the civilization of the world for fifteen centuries. They were the teachers of the Greeks. Their science and their philosophy constituted the foundation on which subsequent nations built ; yet they had not knowledge enough to construct a bridge. The far-famed Thebes, styled by Homer " the hundred gated Thebes," stood on both banks of the Nile ; and its different divisions were never united by a bridge. Our new-made structure over the Con-

nectient would have spanned the Nile, where that mighty city stood; but the old Egyptian never conceived of a work of art so useful and requiring so much skill and science in union, to hang it above a running stream. The Nile was literally alive with boatmen driving all sorts of water craft with oars and sails from the trough hollowed from a single trunk, the papyrus shallop smeared with bitumen, the fragile boat of light earthen ware and the raft of reeds, to the stately barge for commerce and the royal yacht for pleasure.

The grain and fruits of the Delta passed up the Nile to the markets of Diospolis; and the downward current bore on its tide, the quarried stones of the Thebaid to Sais and Canopus. No bridge spanned the sacred stream throughout the fifteen hundred miles of its known course. Herodotus says that there were twenty thousand towns upon its banks. The average width of the valley of the river never exceeded seven miles. If within these narrow limits, one half the number of towns mentioned by the Greek traveller, ever existed, the constant ferrying of people from bank to bank must have afforded cause for incessant motion upon the water. Fishers and fowlers, too, diversified the scene. No nation of antiquity had so much occasion for bridges as the Egyptians. For a considerable portion of the year their whole arable land was flooded by the Nile so as to resemble an archipelago with scattered islands rising here and there above its surface. Their occupations forced them to live upon the water much of the time, yet they never found means to unite, by a permanent structure, the opposite banks of the divine river. They were acquainted with the arch but seldom employed it in building. They built their temples and palaces of stone. Their walls were massive, thick, and sloping from the base to the battlements. This feature of their architecture is supposed to have been derived from the mud walls and mounds of their ancestors. The roofs and covered ways were flat, composed of enormous blocks of stone extending from one wall to another or from one column to another. Even their gates and doors were not arched. Existing ruins reveal these facts. It was probably due therefore, to their ignorance and

want of skill that they never bridged the Nile. The arch does not appear in Egypt, according to Mr. Wilkinson, till the 18th dynasty of kings, when there existed a close connection with the Assyrians, who understood the principle of the arch. A small vaulted chamber of baked bricks has been found at Nimroud; but there are no traces of an arch or vault used on a large scale. The roofs of Assyrian palaces and temples were flat. The use of columns seems not to have been known till after the occupation of Assyria by the Greeks. The Babylonians had sufficient science to bridge over the Euphrates. Their city stood on both banks of this river and the bridge, which united the two divisions, is stated by some authors to have been five furlongs in length. It consisted of piers with beams laid horizontally from pier to pier. The river is said to have been turned from its channel, while the piers were built. This is the oldest bridge of which we have any record. There is no mention of such a structure in the Old Testament. The Chinese are probably the pioneers of the world in this kind of mechanism. "The bridge of Tsuen-teheou-fou, the capital of Fo-kien, has more than 100 arches. At Tsuen-teheou, there is a bridge with 300 stone piers with angles toward the river." Some of their bridges are very long, very strong, and very old. They use pointed, semi-circular, polygonal and semi-elliptical arches in their various stone bridges. Their construction is curious, ingenious and wonderfully permanent.

When South America was conquered by the Spaniards, light, elastic suspension bridges had been constructed by the Incas across mountain torrents and yawning chasms. The same kind of bridges still exists in that country. They are very narrow, not exceeding four and a half feet in width, and being built of light and flexible materials, oscillate, like a pendulum, in a terrific manner, when they are crossed. Sometimes a single rush rope sustains a swinging chair or carriage, which is drawn across by another rope. This is almost equivalent to travelling in a balloon. The danger is probably quite as great.

The Persians, in their invasion of European countries, made use of bridges of ships. Darius in passing into Scythia is said

to have bridged the Thracian Bosphorus with boats, superintended by a Greek engineer named Mandrocles. The same king made a bridge of ships across the Danube over which report says he led 700,000 men, a number greatly exaggerated. The most famous bridge of ships ever built, was that constructed by Phœnician and Egyptian seamen, for Xerxes over the Hellespont, seven eighths of a mile in length. The first bridge was broken up by a storm and the enraged despot lashed and fettered the sea in his ire. The second was built of 360 triremes on the side next to the Propontis, ranged lengthwise across the stream, and 314, on the other side facing down the current, all secured by anchors, and cables united them. The whole was made fast to the shore by enormous cables twisted from ropes of flax and papyrus bark and stretched tight by means of a windlass on each side. This bridge partook of the nature of suspension bridges, as the chief power that kept it at its moorings was on the land. The decks of the vessels were covered with planks which were strown with boughs of trees with a stratum of earth above them. On either side were bulwarks to prevent the horses from being alarmed in crossing. The transit of the invading army occupied seven days and nights, as the story runs. The Greeks were a maritime people. The Athenians, like the modern English, gloried in their supremacy upon the seas. They almost lived upon the water. Ships, boats and rafts were far more familiar to their thoughts than bridges. In the days of their highest renown, when their architecture had reached a degree of perfection which has never been surpassed, when their porticoes were lined with paintings and their very streets adorned with statues, the people waded over the Cephissus for the want of a bridge. Their streams were small and limited in extent. This fact, perhaps, made them more indifferent about facilities of transit. The Greeks do not seem to have valued the arch sufficiently to excel in the building of bridges or sewers. The Romans delighted in stupendous arches and capacious domes. The cloaca maxima is among the oldest stone structures in existence. It is said to have been built by Tarquinius Priscus to drain Rome of its surplus waters. It is formed of three

concentric arches of which the innermost is a semicircular vault of fourteen feet in diameter, composed of hewn stone without cement. It is to day as perfect as it was 2500 years ago and is a very remarkable monument of the skill of that early day. The Romans excelled in works of practical utility. They built magnificent aqueducts, roads and bridges. Stone arches they carried to a high pitch of perfection. The oldest stone bridges known to history, (several of which still exist,) were built by the Romans. Their solidity, proportions and durability show that they were constructed on scientific principles. The oldest structures of this kind were not distinguished for the breadth of their arches or the lightness of their piers. Strength, and majesty marked Roman works as they did the Roman mind. The chord of their arches, in early times, seldom exceeded 80 feet. They were mostly semicircular. Pliny mentions two large bridges in Greece, which are supposed to have been built after the conquest of that country by the Romans. One of them spanned the Acheron and was 1000 feet in length. The other united the island of Eubœa to Bœotia, across the straits of Euripus, which in the narrowest part, is about forty yards in width. There were at different times eight bridges across the Tiber, in Rome. The oldest was called Pons Sublicius, or the wooden bridge. It was built by Ancus Martius, the fourth king of Rome, provided such a man ever lived. The bridge was a reality whatever may have been the fate of the reputed builder. The old story says it was cut down during the war of Porsenna, the Etrurian, while Horatius Cocles, single-handed, prevented the enemy from entering upon its Northern end. It was rebuilt without nails so that it could be removed if necessary with greater facility. The reconstruction was superintended by the high priests; hence they are called "pontifices," pontiffs or bridge-builders. It is a pity that all pontiffs could not be as well employed. A wooden bridge was standing in the place where the last was built, in the age of Augustus, 700 years later. Ovid alludes to it in the following distich:

"Tum quoque priscorum virgo simulacra virorum
Mittere roboreo scirpea ponte solet."

This first Italian bridge and those of Lodi and Magenta will be forever memorable in history as the theatres of great battles. The Roman bridge was a favorite resort for beggars; hence a man without visible means of support was called "*aliquis de ponte*," a man from the bridge. There was a small island in the Tiber, between the city and mount Janiculum on the North. A bridge connecting the city with the island on which some temples stood, was built about the time of the conspiracy of Catiline by Lucius Fabricius. The other portion which joins the island to Janiculum was built by Cestius Gallus, in the reign of Tiberius. Both these structures still stand, the one a monument of republican enterprise; the other of imperial exaction. Roman bridges in the provinces were numerous and often imposing in appearance. They were the chief embellishments of their military roads which intersected every part of the empire. Their magnificent ruins exist in Italy, Portugal and Spain to attest the scale of grandeur with which works of national utility were constructed by this practical people. One of the finest of these structures still exists entire at Ariminum, now Rimini in Italy. It was commenced by Augustus and completed by Tiberius.

Trajan reared a magnificent bridge over the Danube. It was 3010 feet in length and 48 high. Twenty-two arches were supported by twenty-three piers, with a platform of wood above. There exists a representation of it on the column of Trajan at Rome. It was destroyed by Hadrian under pretence that it would let in the barbarians upon Roman territory; or as others assert, from envy because his reign would be signalized by no such work of art. Other authorities describe the bridge differently. It has with them, greater length and height. It was built in the narrowest, and of course, the deepest and most rapid portion of the river. For that day, it was a work of astonishing magnificence. During the dark ages, the Moors were celebrated for their bridge-building. The bridge of Cordova over the Guadalquiver remains to bear witness to their success. In the eighteenth century, bridges were built in France by religious societies as a work of benevolence. Travellers were often robbed by banditti in crossing rivers. The "Brethren of the

Bridge," as they were styled, built bridges, established ferries and erected caravansaries on the banks of rivers to prevent such outrages and facilitate travel. Queen Matilda, in the 11th century, came near drowning in crossing the river Lea at Stratford, England. She, thereupon, built a stone bridge over the stream called "Le Bow," from the Latin "De Arcubus"

The bridge that spans the Rhone, at Avignon, was built by a religious Society. It was composed of eighteen arches, the largest of which was measured by a chord of 110 feet. The oldest bridge in England is the Gothic triangular bridge at Croyland, in Lincolnshire, the county from which many of our Puritan ancestors emigrated. It is said to have been built A. D. 860. It is so steep that only foot passengers can cross it. The longest bridge in England belonging to the dark ages is that over the Trent at Burton, in Staffordshire. It was built in the 12th century, of squared freestone. It has 34 arches and is 1545 feet in length. The London bridge was commenced in 1176, and for many years sustained dwelling houses upon it, like the solid earth. They were not removed till the 18th century. Till 1750, there was only one bridge across the Thames. Two carts could not cross it abreast. For nearly a century prior to that date, strenuous efforts had been made to bridge the Thames higher up. The Londoners were exclusive in their claims. It would ruin the city they said, to have another place for carts to cross the river. They succeeded in defeating the charters of other bridges till 1750. No less than nine bridges now span the Thames within a few miles from its mouth. The new London bridge allows four vehicles abreast, besides side walks for persons on foot. No less than 12,000 carriages and 60,000 pedestrians cross it daily.

The first attempt to use cast iron in bridge building, was at Lyons, in France, in 1755. It did not succeed. An English architect by the name of Pritchard, not long afterwards built a cast-iron bridge over the Severn, of 100 feet span. The next attempt was made by the famous Thomas Paine, "stay maker, privateersman, exciseman, school-master, poet, politician, legislator and arch-infidel." He undertook to build an iron bridge

over the Schuylkill of 400 feet span. He had the castings made in England, and the bridge was set up near London, on Paddington Green. Paine was unable to meet his debts, and it was sold and set up over the river Wear at Sunderland, in 1796. It is even now regarded as one of the boldest experiments in engineering ever executed. About the close of the last century, an English stone mason by the name of Telford became quite famous by the construction of cast iron arched bridges over small streams in England. He proposed to rebuild the London Bridge with a single arch, of 600 feet chord, but at that time the project was regarded as visionary, and rejected. Now there are five bridges crossing the Thames within the precincts of London. The longest cast iron arch in England is in the Southwark bridge, being measured by a chord of 240 feet. The most extensive stone arch known is over the Dee at Chester, 200 feet across. In the early part of this century, suspension bridges supported by wrought iron chains came into use. The most remarkable of these structures is hung over an arm of the sea called the Menai Straits, between Wales and the island of Anglesea. It was superintended by Mr. Brown Telford, who had built so many roads and bridges that his cotemporaries styled him "Pontifex maximus" and the "Colossus of Roads."

The piers are nearly 200 feet high, and the bridge swings 100 feet above the water. The weight thus hung in the air is 489 tons, a work infinitely more difficult of execution than the rearing of Egyptian obelisks, or rolling up mighty blocks to lift the pyramids so high as "to meet the sun in his coming." Pendent bridges are often injured by oscillation. An inconsiderable weight sometimes snaps the chains by the vibration which is communicated to them from the regular movement of the progressing burden. A suspension bridge near Manchester was broken down by the regular tread of 60 soldiers marching over it. The longest bridge of this kind spans a valley in Switzerland. The space between the towers is 870 feet. The cables are composed of fine wires, like the Atlantic cable, each containing 1056 threads bound by ligatures of the same material

every two feet. The suspension bridge over the Niagara river, two miles below the falls, is perhaps as remarkable a structure of the kind as this country affords. It cost about \$400,000. The English would have made the expense double that sum. The span is 820 feet, and the bridge swings 250 feet above the stream.

The cables are ten inches in diameter, composed of 3640 wires. Hitherto, it has answered the end for which it was built, and promises to be durable. The construction of railroads has multiplied bridges indefinitely. Since 1825, more than 25,000 have been built in England alone. Iron is the principal material now used for such structures. "In England, the pig iron produced in one year (1857) amounted to 3,636,377 tons, which at an average of \$20 per ton, would yield an income of, at least, \$72,500,000. In the first cast iron bridges the arch was used. Mr. George Stephenson first employed for small bridges cast iron beams, then cast-iron arch girders with the lower web larger than the upper, then tubular bridges made of boiler plates riveted together. One of the most remarkable products of human ingenuity is the bridge which crosses the valley between Newcastle and Gateshead. Newcastle occupies the sides and summits of three acclivities which rise steeply from the river Tyne. It is the great coal mart of England; hence it is very important to enter it without climbing a hill. The problem of Mr. Stephenson was to throw a bridge across the deep ravine in the bottom of which runs the river, a navigable river crowded with vessels. The gorge is very deep, so that to one descending into it in the night it seems to be the very mouth of Tartarus. For centuries, the travel and traffic from the North and South plunged down into this abyss, crossed this modern Styx on a bridge, and then climbed the other side into the upper air. The sides of these hills are covered with antique dwellings and shops. The river at this point is 515 feet wide; the width of the valley to be bridged above it 4000 feet. The bridge passes far above the tops of the houses on the sides of the gorge and of the ships in the river. The construction of the bridge required great skill and invention. A pier must be set up in the

middle of the river. Piles were driven to the depth of 32 feet in the sand. Titanic steam hammers weighing thirty hundred each, dealing sixty or seventy strokes in a minute, sent one of these denuded trees to bed in about four minutes. The extricated heat was sometimes so great as to set the head of the pile on fire. After the piles were all driven, it was very difficult to build a coffer dam that would shut out the water. The surrounding pressure forced in the water through the quick sands from the bottom, and no success was had till they rubbled and cemented the coffer dam. It required no little labor and skill to make a concrete water-proof foundation on the bottom of a deep river flowing over quick sand. More than 400,000 cubic feet of material was used in constructing the piers alone, and a much larger amount in the abutments on the land. The double bridge above for the railroad and for passengers on foot and in carriages, is made entirely of wrought and cast iron. It was completed in 1849. Such a work strikes the spectator with awe and astonishment. It seems to surpass the finite powers of man. It is certainly very far in advance of any thing ancient artists ever conceived of or executed. Still greater skill and ingenuity have been exhibited in other places in securing the foundation for bridges, where sands, mud or bogs were to be crossed. Iron has been used for this purpose, also. Dr. Pott invented cast iron cylindrical piles open at the bottom and closed at the top, except where a suction tube is inserted by which the air or water forcing its way through the mud into the cylinder is exhausted and the atmospheric pressure from above forces it down. These tubular piles, like those in Artesian wells, may be united and sunk to any depth which the situation requires.

Mr. Mitchell also invented screw pipes which are turned like an auger, and thus forced home till they meet some solid material to rest upon. But where stones obstruct this boring process, the huge tubes have been used as diving bells, containing workmen within them who sometimes work their way like worms to the depth of 90 feet below the surface. These tubes are at least seven feet in diameter, and fresh air is supplied from above by a steam forcing pump. The mud, sand and stones dug up

from the bottom are passed up in buckets to a chamber above, and then the orifice is closed by a wrought iron cover, which can be securely bolted. From the chamber above the workmen at the surface have the means of drawing up or letting down whatever they please. So a solid foundation is constructed upon shifting sands, yielding mud or porous rag stone.

Those theorists, who hold to the necessary decline of all nations, sometimes prophecy that ages hence, some philosopher from New Zealand perhaps, may sit upon one of the mouldering arches of London Bridge and muse, like Marius amid the ruins of Carthage, upon the instability of national greatness. Suppose, then, that 3000 years hence, when a long night of barbarism has settled upon Albion's sea-girt isle,

"That precious stone set in the silver sea,"

some artificer in the progress of a new civilization, should find a nest of these cast-iron piles, 50 feet below the surface of the ground, which, perhaps, by geological changes, may then be the body of a mountain instead of the bed of a river! How many ingenious theories would be broached to account for the strange discovery. Some opponents of science would doubtless pronounce them mere *lusus naturæ*, products of the divine hand, placed there to try the faith of an unbelieving generation! Others would boldly assert that they were wrought by human skill; and thus, an interminable war of words would be waged over these dumb witnesses of a better age. The English author, Speed, speaking of the fossil Ammonites of St. Hilda, in Yorkshire, calls them "certain stones fashioned like unto serpents, folded and wrapped round like a wreath; even the very pastimes of nature, who, when she is wearied with serious workes, sometimes forgeth and shapeth things by way of sport and recreation." Had the pyramids been swallowed up by an earthquake 2500 years ago, and disinterred by modern geologists, we should doubtless find some antiquated thinkers who would class them among Nature's sports.

I have previously described the suspension bridge which spans the Menai Straits. This was built for ordinary travel. More recently a tubular bridge of iron has been hung over this same

arm of the sea for the running of cars. It is called the Britannia bridge. It is 1513 feet in length. It was raised in four divisions by the hydrostatic press, without human power except to regulate the machinery ; each section weighing with the appliances necessary to raise it 1800 tons. When the successive sections were all united in one continuous tube, at an elevation of 100 feet above the water, a train of cars drawn by three engines, laden with 300 tons of coal, attended by about 40 carriages containing six or seven hundred passengers, on the 5th of March, 1850, passed through it in safety, having settled the iron structure in the centre only four-tenths of an inch. Some scientific engineers maintain that the roof of this bridge being double, and the intervening space being divided into septs like a honey-comb, is as strong as though it were made of solid iron. Certainly no ordinary weight carried in the usual routine of railroad business, has ever displaced or shattered a single plate or bolt in the cellular tissue of this iron frame. How far superior is this as a work of art to any thing the ancients ever dreamed or thought of. The "Victoria Bridge," across the St. Lawrence, which is now building, is constructed after the same model. It will be two miles in length. Its estimated cost is \$6,250,000. The iron tubes are to be supported by 24 piers. The centre span is 330 feet ; the others 242. The piers are fifteen feet wide, except the two centre ones, which are eighteen. These narrow structures of masonry are built to resist the flow and crushing weight of all the ice of this mighty river, with all the avalanches of ice that come rushing and tumbling from 2000 miles of the river and lakes above, at a speed often of ten miles to the hour. When completed it will surpass in length, massive solidity, strength and durability, any other similar work in the world. Though Americans boast their superiority in yachts and reapers, horse-tamers and chess-players, yet as bridge-builders, the English have no peers. In the use of iron for rails, bridges and steamers, they can safely challenge the competition of the world. If the Great Eastern is ever floated out of the Thames, it will be the largest vessel that ever walked the water of any ocean. It is larger than Noah's ark. It is

nearly an eighth of a mile in length. It is made of 30,000 plates of iron, united by 3,000,000 rivets, and weighs 12,000 tons. We expect a visit from it. Money alone is needed to put the monster in motion, and drive it to our shores. The English Engineers are peculiarly bold and persevering. The tunnel under the Thames, the first railroad from Manchester to Liverpool, the bridge over the Menai Straits, and the iron steamer, the Great Eastern, were all carried forward against the most powerful opposition and obstacles, both material and moral, apparently insurmountable. The inspiration of genius makes men bold, decided and enthusiastic. Men who conceive great ideas are usually very persevering. Their plans master them. A great invention absorbs the whole attention, and the man talks of nothing else. There is a letter in existence written by Marion de Lorme, in 1641. It describes her visit to the Bicêtre, the celebrated mad house of Paris. She says:—"We were crossing the court, and I, more dead than alive with fright, kept close to my companion's side, when a frightful face appeared behind some immense bars, and a hoarse voice exclaimed, 'I am not mad, I am not mad! I have made a discovery that would enrich the country that adopted it.' What has he discovered? asked our guide. Oh, answered the keeper, shrugging his shoulders, something trifling enough; you would never guess it. It is the use of the steam of boiling water. His name is Solomon de Caus; he came from Normandy four years ago, to present to the king a statement of the wonderful effects that might be produced from his invention. To listen to him, you would imagine that with steam you could navigate ships, move carriages; in fact, there is no end to the miracles which he insists upon it could be performed." This man was so persistent in his appeals, that the king's minister to be rid of him put him in a mad house. Here he moaned out his weary plaint, "I am not mad, I am not mad! I have made a discovery!" And so he had; but the ignorant court could not appreciate it. He published a book on the power of steam and its uses, which was afterwards embodied, to a considerable extent, in a work published by the Marquis of Worcester, entitled "The Century of

Inventions." But poor de Caus, who was more than a century in advance of his age, lost his liberty in consequence of his noble discoveries. So an ignorant world often treats its scientific benefactors.

The first surveyors of the railroad from Liverpool to Manchester were mobbed by the owners of the soil; their instruments were broken and they were driven off by violence. The men who proposed the road were hated by the land owners as much as if they had designed to convert their fields into camps for a standing army. Some years later, when a bill to incorporate that road was before parliament, the engineer, Mr. George Stephenson, was examined by acute lawyers before the committee of Parliament, as if he had been a spy of France plotting an invasion of the country. In the lower house, Sir Isaac Coffin denounced the project as a most flagrant imposition. He would not consent to see the widow's premises invaded. He asked in the most dignified, senatorial manner: "how would any person like to have a railroad under his parlor window? What, I should like to know," said he, "is to be done with all those who have advanced money in making and repairing turnpikes? What with those who may still wish to travel in their own or hired carriages, after the fashion of their forefathers? What is to become of coach-makers, harness-makers, and coachmen, inn-keepers, horse breeders and horse dealers? Is the House aware of the smoke and noise, the hiss and the whirl, which locomotive engines, passing at a rate of eight or ten miles an hour occasion? Neither the cattle plowing in the fields nor grazing in the meadows could behold them without dismay! Iron would rise in price 100 per cent., or more probably, be exhausted altogether! It would be the greatest nuisance, the most complete disturbance of quiet and comfort, in all parts of the kingdom, that the ingenuity of man could invent!" Such were the groans of conservatism. But the bill was obtained at an expense of \$135,000, and within one year after the road was built, land all along the line was selling at almost fabulous prices; and the cattle plowed and fed in quiet! The road was opened in 1830. The transit which used to be made in coaches, in four hours, was made by

rail in half an hour, and the travel was tripled the first year. The annual saving to the public in money, to say nothing of time, was \$1,250,000 a year. Lords Derby and Sefton, who succeeded in forcing the road from their lands, afterwards patronised a rival road on condition it should pass through their estates. Interest enlighthens the blind.

When the bill for the erection of a suspension bridge over the Danube at Buda-Pesth, was before the Diet of Hungary, in 1829, the nobles were shocked by the proposition that they should be taxed for such a purpose. The *Judex Curiae* shed tears on the occasion and declared solemnly, that he would never pass that ill-fated bridge, from the erection of which he should date the downfall of the Hungarian nobility. The bridge was only partially finished in 1849, when the Hungarian rebellion broke out. Still it was so covered that advancing and retreating armies crossed it. The Austrians endeavored to blow it up. A ton and a half of powder was fired at once, but the iron fabric stood firm. It was completed after the war and is now pronounced by the Hungarians "the eighth wonder of the world." When the bridge, which I have already described, was built over the valley of the Tyne, the people of Gateshead sorrowed over the innovation. One prominent citizen used to exclaim as he heard the steam hammer driving down the piles: "There goes another nail in the coffin of Gateshead." Some people's religion is only a reverence for what is old and a hostility to everything new. Mere change even for the better is disagreeable to most men. Opinions soon harden into prejudices; and modes of action at first adopted by imitation or caprice soon become fixed habits. Prejudices and habits form an invincible coat of mail to the conservative. When Fulton was experimenting with steam on the water, he made trial of a new boat on the Seine. It was not successful. Capitalists and officials turned upon him a cold shoulder at once; but he, like all men who originate great plans, was importunate. He gained the ear of Napoleon. He advocated with enthusiasm his project of navigating the ocean by steam. The emperor was weary of him and said to the American ambassador, Mr. Livingstone:

“*Debarrez-moi de ce fou d’Americain ;*” rid me of this fool of an American. It was easy to close the palace door against the stranger, but it was impossible to stifle, by an imperial edict, the stirrings of genius. The autocrat went down, but steam went up and Fulton’s fame rose with it.

Appended to Goldsmith’s beautiful poem, “the Traveller,” are a few pithy lines penned by Dr. Johnson. Among them are the following :

“ In every government though terror reign,
Though tyrant kings or tyrant laws restrain,
How small of all that human hearts endure
That part which laws or kings can cause or cure.”

This is sheer stoicism. To hearts panting for great deeds ; to brains teeming with new discoveries ; to hands full of latent enterprise, it is unspeakably fallacious. Tyrants and laws have often arrested the march of improvement, stifled the voice of freedom, crushed the defenders of liberty and extinguished hope in brave hearts. Ignorant tyrants and unequal laws have often stamped their age with immobility and moral death. Monopolies, privileges, titles and corporate trusts in perpetuity, have been the agencies by which the hand of industry has been crippled. Until the close of the last session of the British Parliament, the largest portion of her immense colonial possessions were governed by commercial corporations. The East India Company was an *imperium in imperio*, wielding a power superior to that of any European monarchy. The larger part of British North America, a country exceeding in size the territory of the thirty-three United States, was governed by a corporation. Indeed this entire continent, so far as English influence extends has been settled by chartered companies and by proprietors receiving their authority from the crown. That whole system of carrying on commerce and colonization by corporations and monopolies has been forever abolished. In past ages, the most important business of all nations has been transacted through the agency of corporations. Companies and guilds, special privileges secured by charters and grants, and exclusive monopolies have proved to be the greatest obstacles, next to royal prerogatives, to the progress of civil liberty. The institu-

tions which were once useful and necessary, by corrupt administration of their power and funds, have become oppressive and injurious. The rotten boroughs of England which, till the partial reform of 1832,* hung like a millstone upon the neck of freedom, and the rights of franchise, are still agitating the British empire from the Shetland Isles to Lizard Point, like the throes of a political earthquake. Their days are numbered. They will soon pass away and coming generations will wonder that they ever existed. The chief office of the European legislator now is to undo the work of his predecessors and remove old abuses sustained by law and use. This has been the office of philanthropists and reformers since the days of Luther; and the wars which have deluged that continent in blood for three centuries, have arisen from the hostility of corporations, privileged orders and titled imbeciles to the people's rights. There are some enterprises which cannot be conveniently carried on by individuals. In such cases a union of capital and influence is necessary; but even then, it is fast becoming the general conviction, that ordinary partnerships are preferable to chartered corporations. The numerous frauds that have grown out of our railroad and factory companies have made them objects of suspicion and aversion to a majority of the honest yeomanry of the country. "Corporations," said Lord Coke, "cannot commit trespass, nor be outlawed, nor excommunicated, for they have no souls." The public are beginning to think that they who manage them either have no souls or inevitably lose them, when they take office.

How far are Corporations responsible? This is a grave moral question. The highest pecuniary interests of the public are entrusted to them. A large portion of the wealth of the whole community is invested in them. Our temporal prosperity, in a

* "There are," said Mr. Bright, in his speech at Birmingham,—“in the House of Commons, at present, 330 members, (more than half,) whose whole number of constituents do not amount to more than 180,000; and there are, at the same time, in Parliament, 24 members whose constituents are upwards of 200,000 in number; and while the constituents of the 330 members are assessed to the property tax at £15,000,000, the constituents of the 24 members are assessed to the same tax at more than £24,000,000.

high degree, depends on the fidelity of our public agents. Recently, the confidence reposed in corporation officials, has been grossly betrayed. It is fast becoming the general opinion that funds can not be safely invested in any institution managed by irresponsible directors.

Millions of money have already been lost by the management of railroads. It seems probable, now, that most of the capital stock of the roads, already constructed, will be a dead loss to the owners. Many of the roads have been badly located to accommodate some ambitious president or favor some local interest. Rival roads have been built by disaffected parties, and both the old and the new investments have been rendered worthless. Men have been induced to subscribe to the capital stock of new roads by exaggerated accounts of the freight and travel to be accommodated, and by the delusive hope of a sudden rise of land, in every village through which a road passes. These promises have been disappointed. Then, the intriguing directors have advocated branch roads, to secure railroad facilities for themselves or their friends, and these have proved a failure. Companies have incurred large debts, and at the same time large dividends have been declared and paid by borrowed money. This has been the policy of directors, till the roads they managed lost credit and became bankrupt; then, the ingenious device of "*preferred stock*" was invented, and capitalists were induced to risk large sums from the hope of increased interest with the best security. This plan *preferred* the new subscribers and *deferred* and robbed the old. It was wrong in its inception and oppressive in its operation. This project soon failed, and bonds were issued pledging the capital stock of the holders for the payment of them. Each annual report announces to the stockholders an increase of income, but no dividends. The floating debts, too, increase with an overflowing treasury. The bond-holders find that they have been duped; they get no interest. The increased expenses of running the roads absorb all of the income. They begin to inquire for a legal remedy. They are gravely told that the law can not aid them. Railroads are new institutions. The common law has no decision by which

their rights can be protected. They may seize the road, but they can not run it ; for they are not the corporation. So the mortgagees begin to doubt whether their lien upon the road is of any value. Soon, they learn that great frauds have been committed by confidential agents of their favorite roads. Fictitious stock has been issued. The law is again appealed to, but the oracles of Themis "palter in a double sense." There are no *precedents*. The villain must go "unwhipt of justice," because of the deficiencies of the law. If a poor, starving laborer steals a loaf of bread to satisfy his hunger, the law has a fearful penalty for the offence. If a *gentleman* defrauds a company of thousands, or even millions of dollars, and retires to a private palace to enjoy the fruits of his robbery, the law has no punishment for him. How strange that the highest crimes can not be punished. What a farce is our common law, if the greatest villains can not be reached by it. The statute law is our only remedy and that is only prospective. Bank officials are beginning to copy the frauds of those of railroads. Almost every week makes startling disclosures of robberies committed on a large scale ; and, what is very remarkable, few of the offenders are punished.

The same state of things prevails in England. A recent number of the Edinburgh Review reveals the monstrous abuses which have been practiced upon the public by railroad agents, contractors, lawyers, engineers, directors and *members of parliament*. These worthies seem to have been leagued together to cheat the stockholders of their honest dues. More than 150 members of parliament are directly interested in railroad speculations, in sums varying from £291,000 downwards to a single share. The parliamentary expenses for securing charters have varied from £650 to £3000 per mile ! In one contest, £57,000 were spent among six counsellors and twenty solicitors. The sums expended in legal and parliamentary intrigues, for nine years past, have reached £480,000, an average of £53,000 per annum ! Enormous prices have been paid for land damages. In one case £120,000 were paid for land said to be worth only £5000.

The frauds perpetrated by agents, lawyers, politicians and officials are truly astounding. The light is just beginning to shine upon the secret operations of men whom the public have trusted and honored in this country. It is now a common saying among railroad stockholders, "I have no confidence in the managers of these roads. Property is not safe in their hands. I mean to sell every share I own and leave these rotten institutions to their fate." But is there no remedy for these abuses? Must the business of the whole community be arrested because honest men can not be found to manage public trusts? The stockholders are generally so numerous that they can not meet in person to investigate the proceedings of their agents. They must *trust* somebody. If faithful servants can not be found, society must be dissolved into its original elements, and no improvement can be made except by individuals. But we are not yet reduced to this dilemma. Reform will do the work for us. The men who have proved recreant to their trust must be removed, and honest men installed in their places. The laws must be altered to meet the present wants of the public, and corporate property may yet be safe.

In our country, stocks in turnpikes and bridges have been the favorites of capitalists. They have been ready to invest their funds in them, because they have generally yielded liberal dividends. The public good is seldom considered by the proprietors. Their object is gain; and they care not at what expense of money or inconvenience to others it is acquired. In the early history of the country, our legislatures gave unlimited powers to such corporations under the impression that they were public benefactors, as, in many instances, they doubtless were. In recent times, charters are rarely granted, in our State, without a reserved right to amend them if the public good requires it. This is a democratic doctrine which has received much abuse from conservatives, but time and experience have demonstrated its utility beyond a doubt. The public good should in all cases, override all privileges and all merely legal claims of individuals. If the government can take my person and compel me to fight for my country, *a fortiori*, it may take my property

for the common defence. The right of "eminent domain" is essential to the existence of any government. It cannot defend itself without it. If the life and estate of an individual may be rightfully taken for public uses, is the property of a soulless corporation more sacred? Can the creature of law insult its creator and refuse submission to his reasonable requisitions? It is an axiom of our governments, both of the United States and of each of the separate states, that "all power is derived from the people." The legal voters are the sovereigns. They can create and they destroy, when the greatest good of the whole requires it. The highest Courts in the country are guided by these principles. When the public call imperatively for improvements, chartered rights must yield. So the Supreme Court of the United States has repeatedly decided; and we have reason to believe that they will be guided by a regard for the public welfare in all similar decisions for the future. The constitution of the United States was established expressly "to promote the general welfare;" and all its departments, legislative, executive and judicial, ought to be administered with a strict regard to this fundamental principle of the organic law of the land. When the country was sparsely settled and the tillers of the soil were poor, it was considered sound policy by our legislatures to invite capitalists to build roads and bridges and take toll of travellers for their remuneration. The exigencies of the times called for such enactments. That day has now gone by. The people have become wealthy; and, wherever the public wish to travel, the property of the community ought to build and support convenient bridges and highways. Toll-gates are contrary to the genius of our free institutions and are only tolerated from necessity. Where men travel on foot or in their own carriages, in a country as populous and wealthy as New England, they should no more be taxed for the privilege than they should be taxed for the sun and air. It is for the interest of every man, whether he remains at home or scours the country, to aid in the construction of free roads and free bridges. If he be a farmer or a mechanic, his produce or his manufactures must be carried over those roads, though he may never

pass out of the shadow of his own house or shop. Every community is a joint-stock company. That which benefits one ultimately benefits all. The market man who brings his produce over a free bridge can sell it cheaper than he who pays toll. The drover who drives his beeves and sheep over a free road can afford to give a higher price for them than he who pays a fee every twelve miles at a turnpike gate. Corporations having no souls seldom "feel for others' wo." Shylock, in their view, was a model financier. They exact all that "was nominated in the bond."

"I'll have my bond; I will not hear thee speak :
 I'll have my bond; and therefore speak no more.
 I'll not be made a soft and dull-eyed fool,
 To shake the head, relent, and sigh, and yield
 To christian intercessors. Follow not ;
 I'll have no speaking; I'll have my bond."

History records only one instance in which a toll gate was opened without the proffered fee. That occurred in the biography of the celebrated Captain Gilpin. The poetic record stands thus:

"And still as fast as he drew near
 'Twas wonderful to view,
 How in a trice the turnpike men
 Their gates wide open threw."

But this generous act was done by mistake as appears by the veracious record which recites his unfortunate return on the same track :

"And now the turnpike gates again
 Flew open in short space ;
 The toll-men thinking as before
 That Gilpin rode a race."

Like most officials, they expected a doceur in private. Disappointment even to such men, may be "blessings in disguise."

Corporations are usually fond of litigation. They are very sensitive to the least encroachment upon their *legal* rights. They have a high respect for the law when it promotes their interest ; but when the lawyer's bull gores the farmer's ox, "*that alters the case.*" Insurance companies are very rigid in exacting assessments, but very reluctant to pay losses. The general rule has been to contest a claim where there is the slightest legal

ground to evade its payment; to enforce a claim where the defendant can be badgered into submission. The law seems more terrible when it is backed by a wealthy corporation. The agents of such august bodies seem to regard themselves as exempt from the claims of the "higher law," so long as they can plead in excuse for their oppressive acts, "*the vote of the company.*" Toll bridges and turnpikes like the guilds and corporate societies of mechanics, in the dark ages, have been useful in their day, but like those fraternities, they are the offspring of ignorance, and poverty, *anti social* in their tendency and hostile to the best interests of the masses. Their moral influence, in a wealthy and intelligent community, is evil only and that continually. They lead to contention, promote quarrels and excite litigation. They prevent trade and interrupt social intercourse. Even the natural barriers of mountains and rivers, provoke hostilities between the dwellers upon opposite sides of them.

"Lands intersected by a narrow frith
Abhor each other. Mountains interpos'd
Make enemies of nations, who had else
Like kindred drops been mingled into one"

"Rivals," says Dr. Trench, "in the primary sense of the word are those who dwell on the [opposite] banks of the same stream." A toll-bridge brings them no nearer together. A free bridge would make their interests one, and prevent rivalry. The villages of Norwich and Hanover would have been more wealthy, populous and prosperous than they now are, if they had taxed themselves, twenty-five years ago, to build and support a free bridge across the Connecticut. In our own little community, most articles of food command city prices. Local causes have operated to enhance the market value of every kind of table provisions. Emigration has taken the young and enterprising farmers and mechanics from our own town, to our cities, manufacturing towns and to the West, hence the amount of produce raised for consumption and sale, is much less than it formerly was. Our supplies are now to a great extent, furnished from Vermont. We can not procure them at home, if we would. The railroad, on the opposite bank, like a net, takes most of the surplus produce of the surrounding country to the cities below

us. Besides a convenient depot to arrest the market man, at some seasons of the year, speculators, scour the adjacent country and buy at the doors of the farmers every animal, vegetable and edible root which they can possibly spare. If we would have our tables supplied, we must pay the Vermont farmer an extra price for his time and his toll in bringing across the river that which he could as well sell at his own door. A toll gate or ferry, operates like an embargo on all inland trade. It repels travel and traffic. It harms our friends and aids our rivals. It lessens our patronage, cripples our prosperity and diminishes our population. It is estimated that our village consumes 3000 cords of wood every year. About one half of this fuel is drawn across the river. When the old bridge was in existence, it was the doctrine of the corporation that it was an infringement of their legal rights to cross the river on the ice. Of course, not only the wood brought from Vermont, but the ice taken from the river for summer use, was required to pay toll. Thus the price of the commonest necessities of life was greatly enhanced. The property of the college and of the community around it will be essentially promoted by a free bridge. There is an eloquence in its strong timbers and unobstructed pathway, that invites patronage and wins the market man and the traveller to our village. The student whose limited purse yields not the required fee for extending his daily walk to the green hills of Vermont, no longer wanders like a disconsolate ghost, without his obolus on this side the river. Visitors who honor with their presence, our anniversaries, will no longer pay a tax for setting foot upon our soil ; and those periodical contests waged for more than half a century, by inconsiderate youths with the Cerberus that kept the gate, have received their final quietus. If any event of our brief existence here should call forth our gratitude to divine Providence, it is the abolition of old abuses and the enlargement of our freedom. Liberty to go where we please, is as dear as the right to think what we please. Freedom of motion is as desirable as freedom of conscience ; indeed it is often more productive of peace and contentment. We are told, in oriental story, of an industrious citizen who lived seventy

years within the walls of his native city without ever passing through its gates into the adjacent country. The monarch of that city heard of his domestic habits and wishing to try the effect of a compulsory residence upon the aged man, forbade by a decree, his leaving the city upon any occasion during the rest of his life. This prohibition broke his spirit and he pined away and died of grief at the loss of his freedom.

It is true the exaction of money, at a gate, does not operate like an armed police to prevent our passage, still it exercises a moral restraint almost as coercive. When we walk or drive, we choose the road that is unobstructed and shun that which is legally or illegally barred. The state of Vermont, has not a single toll bridge within its limits. The words which Cowper applied to fugitives from oppression, in England, apply to us:

“ And they themselves once ferried o’er the wave
That parts us, are emancipate and loos’d.”

Massachusetts, too, has made those expensive bridges which lead into Boston free to all who come and go. The tendency of public opinion is toward the abolition of tolls every where on bridges and turnpikes. There is now one point on the Connecticut where travellers may cross the river without paying for the privilege. A work of emancipation for this noble stream has been commenced, successfully prosecuted and triumphantly completed through six miles of its length. The present generation will see the entire four hundred miles of its channel liberated from the odious incumbrance of corporate privileges which obstruct social progress and claim exemption from those laws which govern individuals. It has been demonstrated, too, that a landing place can be found in Vermont for a bridge that is owned in New Hampshire; that our neighbors not only do not oppose the construction of a pier upon their soil, but their benevolence is greater than our faith. They furnish the land and build the abutment of their own choice. They take the lead in the enterprise. They begin the work and the bridge advances from their side to ours. In fact, had it not been for the ingenious objections of counsel, learned in the law, posterity would never have known the legal difficulties the petitioners had to encounter. It

cost the parties in litigation, at least, \$1000 to demonstrate by the successive decisions of three N. H. Courts, the legal possibility of a free bridge across the Connecticut; and had it not been for the prompt and beneficent action of the trustees of Dartmouth College in aid of the enterprise, another siege as long as that of Troy might have been sustained by the Supreme Court of the United States. But no wily Calchas, "seclerumque inventor Ulysses" could have forced their wooden horse within that sacred citadel. His entrance was effectually barred by immemorial usage, by previous decisions and by constitutional provisions. The bridge with all its interests is safe. It is open and free. Let no Vandal hand be raised to deface this noble structure or injure one fibre of its timbers. Palsied be the arm that shall aid in its demolition and speechless be the tongue that would plead for its disfranchisement. Long may it stand as a monument of patriotic effort, of generous contributions, of liberal concession and successful compromises. All parties ought to rejoice that controversy is ended, legal rights protected, the public welfare promoted and the seal of universal approbation set upon the finished labors of the town.

At the close of the address, Prof. Crosby said, that "Having heard from the *Historian*, we would now like a Theological view of the subject," and called upon Rev. Dr. Bournes, of Norwich University, who spoke as follows:—

LADIES AND GENTLEMEN:—If I had any notion that a set speech were expected from me this day, I certainly should not now present myself before you. I am not at all prepared to make a formal address to you, but have been asked by a Committee to come here from Norwich to express the joy of our villagers, at the completion of the Bridge, and to assure the people of Hanover that we most cordially sympathize with them in their satisfaction at this happy event. We know that Roads—the means of communication between nations, and villages, and men—are highly valuable. They are the very bonds of affection between neighbors. They bind them together by cords of love and mutual regard—and bridges are emphatically the knots that tie them together. We feel deeply thankful for the prospect that this may be so in the case of our two villages.

We will send you our good rock-maple, our beech and our birch wood to warm you in winter. We will send sugar too, and eggs and butter, and many other good things to the ladies of Hanover, to help them to sustain creditably the load and agony of their hospitalities at Commencement, and we feel sure we shall be abundantly paid for these things.

But we hope for more than these merely material advantages from this Free Bridge. We hope the two people will be better acquainted with one another. We feel sure, too, that if we see each other oftener we shall like one another better. The separation between two villages is oftentimes the greater as the distance between them is less. Hanover people and Norwich people know more of, and see more of the people of Boston than they do of each other. We hope this may not be so in future. No people, no man can live long alone, cut off from neighbors without being the worse for it.

Little villages that are shut out from the rest of the world become selfish and inordinately conceited. They cannot compare themselves with other people, and so it happens that they learn to think far too much of themselves, and too meanly of other people. They resemble in this respect a boy of whom I once heard. I do not pretend to know his name very accurately, but I believe he was a near relative of the celebrated Mrs. Partington. This boy thought his father's farm was the very finest piece of land in all the world — he knew it was better than any other place — any body could see it had the best location in all the world, for just you stand in front of father's door and look up and you would see *it is right under the centre of Heaven*. People of small villages have too much of this same temper in them. But roads and bridges dispel these delusions. They may diminish somewhat individual satisfaction but they greatly improve a society — make them more kind, liberal, and social. We rejoice then most sincerely in the completion of this Free Bridge.

I must say a few words in reference to one part of the admirable address we have just heard from the learned and eloquent gentleman who has preceded me. I should not wish to stand forward as the advocate of old fogyism. We are by no means the enemies of progress. But I think we should not forget that the old bridge in its day did good service. We cannot join in any general condemnation of corporations, nor in any general execration against them as being always corrupt, and in their nature injurious to a country. We cannot deny that corporations and companies have oftentimes been selfish

and exacting. We cannot deny that they have too often held back a community in their advancement to prosperity. But withal this they have done good service. The country at large is greatly indebted to companies and corporations. There is a time — there is a certain stage of society in which corporations are the very best things for them ; we cannot get along without them.

When a country is young and poor, and finds employment for all its means and money in private works, it needs corporations to execute public works. If, at this stage the rich men do not combine themselves into corporations, and execute public works, these works will not be done at all. The general interest suffers, and the permanent improvement of the country is neglected. The part of wisdom is to accept the services of these corporations when we want them ; to give them thanks for the good they do us, but to retain them no longer than is absolutely necessary ; to use corporate bridges rather than have none, but to build free ones as soon as possible.

And if corporations cling rather too tenaciously to their property, if they are disposed to sacrifice the public welfare in some degree to their private profit, we must resist them and shake them off. But when we have done this good work, when we are clearly out of their hands, let us not cherish ill will against those corporators, but offer them the right hand of fellowship, and invite them to share with us in the common benefit we have achieved for all. They may have been too keen for gain, but in these days who can condemn his brother on a charge like this ? who is fit to throw the first stone at them ? Let this bridge cover any little chasm or rent that may have been made in our society by a perhaps too eager assertion of personal rights, too prolonged a defence of personal property ; let it unite all in love. We are so accustomed when we hear or speak of a new country to think of Iowa, Minnesota, Oregon, or some of those places in the far West, that we forget the age of these towns we live in ; we forget that they are still really very young—very new places. Neither of these villages or towns is yet one hundred years old. I find it stated in Thompson's History of Vermont, that in 1761, THREE men came into the town of Norwich and went and pitched their tent on the margin of the Connecticut, and at that time there were *two* men living in Hanover.

Surely when we take facts like these into account we should not complain that corporations still exists amongst us, we should rather rejoice that we have so soon began to free ourselves from them.

We of Vermont do not yield to the men of Hanover in our sense of the benefit to be derived from a *Free Bridge*—nay, more, we claim that we have from the very first been aware of the value of it—from the first, too, we have looked forward confidently to the time when a Free bridge would span this beautiful River, and one, at least, of our citizens gave clear proof of his admirable foresight in this particular, and also of his determination to assist, at least to throw no impediment in the way of accomplishing this good work. Doctor Lewis always said there ought to be a Free Bridge between these towns—he ought to have the credit of his wisdom and his desire to promote the public welfare. When the corporation were about to raise their first bridge, they applied to Dr. Lewis to buy the land on the Vermont side for a landing, but he would not sell it. He leased it for twenty years to them, on condition that he and his family should always cross toll free. He never did sell the landing place. He never would sell it.

This is now, I believe, the fourth bridge that has been erected at this point. I trust it may long remain to join these Towns in friendship and kindly neighborhood. We invite all Hanoverians to cross over and see us. We think we have greener hills than you have. We think we have pleasanter roads and drives than you have. We invite you to come and see them and enjoy the benefits of them. We invite all ladies and gentlemen. We are selfish in giving this invitation. We expect much pleasure from the increased intercourse between these villages. We have often derived great benefit already from your visits. The last person who crossed the first bridge before its fall was a messenger for the Doctor—we hope we shall not often need the Doctor amongst us, but when we do, we shall hope to see him speedily and shall make him welcome.

And those Wandering Ghosts of whom the learned gentlemen has spoken, as flitting along these New Hampshire shores. If there be any of them, of wasted forms, emaciated with abstinence, exhausted with application and study—tottering along for relaxation and a little wholesome exercise, we invite them to cross this Free Bridge, to come to our side, to refresh themselves, to renew their strength, to gain new vigor that they may return and resume their labors, and be able to go forth healthy, resolute, thoroughly furnished, complete in body and mind, to do service for their country as scholars, men and citizens.

Ladies and Gentlemen, I must conclude as I began, by saying that Norwich deeply sympathizes with you on this happy event. We most heartily join with you in thanking God that we

have been able without serious loss or accident to complete this Bridge.

At the conclusion of Dr. Bournes' speech, which was received with much applause, the chairman remarked that the services of the day would be deficient without a little Philosophy, and called upon Prof. Patterson, who furnished it in the following happy manner :—

LADIES AND GENTLEMEN : — I do not propose at this time, to do so unwise a thing as to follow the able and eloquent address to which we have had the pleasure of listening, with any extended remarks of mine. The best speech I can make, under the circumstances, is to say ditto to Mr. Burke.

I am glad however of this unexpected opportunity to congratulate my fellow citizens of both Norwich and Hanover, upon the completion of our free bridge. The committee of the town who have had the oversight and direction of this matter, have ably discharged their duties, and the work is consummated.

There it stands, strong and free, stretching its long arms to either shore of our beautiful river, and clasping in its firm embrace two sister states, as if impatient of their separation. In its progress it has been a "Bridge of Sighs," but in its completion, it is a pledge of harmony and prosperity.

We may well believe that posterity will number our bridge among the distinguished works of this age, for like the bridges of Trajan and Caesar so celebrated in history, it has been built in times of war, and like those noted structures, it will doubtless, be greatly promotive of the arts of peace. It will not only extend the area of friendly social intercourse and good neighborhood, and add to the convenience and pleasure of every citizen, but opening a free channel between the green and fertile hills of Vermont, and the not less kind, but more exacting soil of our Granite State, it must induce travel, quicken trade, create enterprise and add to the prosperity of every interest of society, through an extended section of both States.

I would not limit my congratulations to the adjacent villages and sister Institutions thus drawn into a more intimate relation, but would extend them to all of the citizens of the towns in which they are located, for it opens two markets in place of one, and though it may create competition, it will enlarge the sphere of business and enterprise, and thus give increased value to labor, personal property and real estate. Monopolies can

rarely be extensively and permanently useful or profitable. But even if it were not so, no people ever lost anything, in the long run, by an act of patriotic, generous public spirit.

A free and unobstructed passage across the river at this point is demanded, not only for our present convenience, but for our future prosperity as a community.

Only a few days since, in a conversation with some gentlemen in Concord in relation to locating a court in this place, they started the objection, and it was their only objection, that we had no bridge over the Connecticut. I had the extreme satisfaction of being able to state to those gentlemen that we had a bridge, a free bridge, a bridge "born and bred in courts" and having a natural proclivity to Judges and Lawyers, and able to endure any amount of good usage from the members of the bar, and I extended to them a cordial invitation to come and locate among us, if the anticipated change in the organization of the courts should ever occur.

We have a just pride in having erected the first free bridge over the Connecticut, but I venture to prophesy that it will be the first of a *series* of free bridges and that we shall not long enjoy our blessing alone. But there is another aspect to the subject. A bridge may be made a study as a work of art.

A modern bridge properly constructed is in some sort a history and illustration of science, and it is not a little singular that the cultivated nations of antiquity were so slow in discovering and applying the principles of science involved in such structures. It is said that at Athens, even in the age in which Pericles adorned the metropolis with those monuments of architectural genius, whose beauty and perfection of art have made their ruins the wonder and the study of succeeding ages, there was no bridge across the river which intercepted the most frequented thoroughfare of the city. But because ancient Athens flourished in spite of her want of a bridge, I see no reason why our little Athens should not be made to flourish with one.

True science is the Pontifex Maximus who works in all material and in all time, and is trammelled by no prescriptive rights or slavish reverence to the past.

We have come together in no spirit of unkindness to exult over that venerable bridge,

"That lay erewhile a holocaust
From out whose ashy womb,"

our nobler, freer structure, Phenix like has risen, but as citizens to congratulate each other on the completion of a public work.

The day is auspicious, and whatever may have been our accidental relation to the enterprise hitherto, let all partake of the spirit of these rejoicings. Here let all differences be *bridged*, and so long as this work shall stand a monument of the enterprise and public spirit of the people, so long may it be made a channel for the interchange of neighborly hospitalities and social friendship.

William H. Duncan, Esq., was now called upon by the President, to edify the audience with a legal view of the case in hand. And that they *were* edified was evident from the attention given to and the applause that followed the subjoined remarks:—

LADIES AND GENTLEMEN:—When I was told that there was to be a celebration, and that speeches were to be made on account of the completion—and upon the occasion of the acceptance, by the Town of Hanover—of the first Free Bridge over Connecticut River, I could not help being reminded of one of our most distinguishing national peculiarities, which is that of speech making upon every conceivable occasion. I also could not help thinking, that the man, who attempted a speech upon such a subject, ought to possess the facility and the power which some one attributed to the younger Pitt, to wit:—The ability to speak a King's speech off-hand, upon the spur of the moment. But we found the man, and the right man, too, for the occasion, and what a flood of learning has he poured out upon the subject; it is like one of the spring freshets of our own River, or rather I should say we have had a White Mountain avalanche of literature upon all the famous bridges of either ancient or modern times.

If the opening of a great line of Railroad—the completion of a Canal—or the introduction of the Cochituate water into Boston, or the Croton into New York, is thought worthy of being celebrated by long processions, and still longer speeches, by waving banners, and exultant music, all conspiring to form a festal scene of spontaneous, universal joy and congratulation—why should not we, in our quiet and beautiful village, in our more quiet, and less ostentatious manner, celebrate an event which contributes, relatively speaking, as much to our comfort and welfare, as does the Railroad to a whole community, or as the introduction of a new supply of water to a great city.

But, Sir, this occasion carries me back, far back into the past.

I think of the contrast between this section of the country, as it now is, as to its facilities for travel and transportation, and what it was sixty or seventy years since, when a charter was obtained for building a Toll Bridge over the Connecticut, between this place and Norwich. The charter was obtained about 1794. Previous to this time a large part of the heavy trade of this part of the country was carried on with Hartford and New York, by means of boats upon the river, and sloops and schooners upon the Sound. The roads between this place and Boston were so poor, that Madam Smith, the wife of Professor Smith, formerly of the College, was obliged to make her bridal tour from Boston to this place horseback.

A large part of the capital for building the Bridge was furnished by the Merchants of Boston, not for the sake of making a profitable investment, but with the intention of diverting the trade of Northern Vermont from Hartford and New York to Boston. The Higginsons, the Salisburys, the Phillipses were among the stockholders,—names distinguished for mercantile honor and probity, and which have been inherited, and worthily worn by many of their descendants.

The building of this Bridge was the *first link* in that chain of Internal Improvement, which has done so much towards developing the resources, and which has added so immensely to the comfort and material prosperity of this section of the country.

The *second link* in this chain of Internal Improvement was the construction of the Fourth New Hampshire Turnpike. A charter was obtained in 1800 for making a road from a point on the East bank of Connecticut River, in Lebanon, nearly opposite White River, to a point in the West bank of the Merrimack River, either in the town of Salisbury or Boscawen, with a branch road from the Easterly abutment of the White River Falls Bridge, running south-easterly to intersect with the main trunk. This has now become, I believe, a public highway.

The *third link* in this chain of improvement was the building of the White River Falls Locks and Canals, which were chartered in 1807, and completed in 1810, at an expense of nearly forty thousand dollars,—an enterprise set on foot and completed by a single individual, then a young man, a little more than thirty years of age. President Dwight, in his tour through New England in 1803, speaking of overcoming the difficulties in the navigation of Connecticut River at the White River Falls says, “at present the quantity of business is insufficient to justify the expense necessary for this purpose.” In 1812, speaking of this undertaking, he says, “my expectations have been

anticipated by a period of many years." I would say of this enterprise, that for nearly forty years, it was to its proprietor a source of almost constant litigation, of excessive annoyance and anxiety, and at the same time of most ample and satisfactory returns.

It is now a little more than thirty years since the completion of the Erie Canal. Its great success roused all the men of enterprise, and led them to form projects for cutting canals wherever practicable or profitable. A plan was set on foot about 1828 for making a canal on the banks of the Connecticut, from the Hampshire and Hampden Canal in Northampton, Massachusetts, to Barnet, Vermont, a distance of one hundred and sixty-five miles, thereby furnishing water communication by means of this Canal, the Hampshire and Hampden Canal, and the Farmington Canal, with New Haven, Connecticut, a distance of two hundred and fifty-one miles. A great many of the men of pith and mark, residing in or near the valley of the Connecticut from the Canadian line to Hartford and New Haven, in Connecticut, in the several States of Vermont, New Hampshire, Massachusetts and Connecticut, were interested in this project.

The late Henry L. Ellsworth, then of Hartford, Connecticut, was one of these men. He advocated this enterprise by speaking and writing most favorably in its behalf.

James Hillhouse, of New Haven, Connecticut, was another of these men—a man of Herculean frame, with an intellect to match—a man of character and influence not only in his own State, but in the National Councils, crowning a long life of political honors by serving as a Senator of the United States, an office under our government second only to the Chief Magistracy of the Country. He was a politician—I beg pardon—a statesman in those days when in order to hold high office, a man must have been a man of refinement—of cultivation—a gentleman—he must have possessed not only political distinction, but must have held also a high social position. I recollect well seeing the venerable and distinguished gentleman, when on a visit to our section of the country, manifesting all the ardor and enthusiasm of youth in this great project.

Col. L. Baldwin, Civil Engineer of the United States, was another of these men. Under his direction a corps of engineers, composed of young men, many of whom became distinguished in after life, among them a son of Governor Clinton, made a reconnoissance of the valley, and if I recollect right the line of the canal was staked out from the northern terminus of the Hampshire and Hampden Canal to Barnet, Vermont.

DeWitt Clinton, then at the zenith of his power and his fame, examined the country with a view to this undertaking from New Haven, Connecticut, to Barnet, Vermont, giving to the project his advice, his encouragement, and the results of his most ample experience.

At about the same time there was a rival project for improving the river, by deepening its channel and increasing the size of its locks and canals, so that steamboats of a light draught could pass from Hartford to the Fifteen Mile Falls. But this project was thrown into the shade by the contemplated canal. Fortunately for the country, neither of these projects succeeded. It would have been time, labor, and money thrown away.

Of the present railroad system I need not speak. Some of you have pleasant, very pleasant associations connected with it, and some of you have associations connected with it that are neither pleasant nor *profitable*.

But what a contrast between to-day and sixty or seventy years since. We are rushed along from Boston to this place by rail in as many *hours* as it took good Madam Smith *days* to make her bridal tour between the two places.

It is not yet three-fourths of a century since Col. Enoch Hale built the first Bridge across Connecticut River. This was at Bellows Falls. Dr. Dwight, in his "Travels through New England," says that "when Col. Hale first formed the design of building this Bridge, its practicability was generally denied, and the undertaker was laughed at for seriously proposing so romantic a project." He built the bridge at an expense of twenty-seven hundred dollars, and it ruined him.

Belknap, speaking of this bridge in 1792, says "it is the only bridge across Connecticut River, but it is in contemplation to erect one thirty-six miles above, at the Middle Bar of White River Falls."

If the great and good Dr. Dwight, who was truly, while he lived, the Jupiter Tonans of the New England Church, and in Connecticut one of the *Dii Majores* in the State—a man of whom you might, almost without exaggeration, say that when he

"Shook his ambrosial locks, and gave the nod,"

it was truly to the lay gentry, and the inferior clergy, I use the term not invidiously,

"The stamp of Fate, the sanction of a God,"

if he thought it worth while to speak of building the Bridge at Bellows Falls—if the learned Belknap thought it not unworthy of the historic pen to record the *intention* of building the White

River Falls Bridge—surely it will not be said of us that we are here to-day exchanging congratulations upon the accomplishment of a trivial, or an unimportant event.

It is an old adage, that “we should speak well of a bridge that has carried us well over”—of the Old Bridge let us all say, “Peace to its ashes,” and may all the ill-will, hard feeling and bad blood that may have been engendered by the late contest be from this time, henceforth, and forever, with its ashes in the deep waters of the river buried.

So much for the material aspect of this subject. I had intended to say something of the historical associations connected with the places around the Bridge—something of Ledyard, that world-renowned traveller. Near the place where the Bridge now stands, he felled, or stole the lofty pine which he made into a “dug out,” launched it upon the stream, and clothed in a bear skin, his only companions an Ovid and a New Testament, made that wondrous voyage down the river in this primitive bark. But I fear that voice, time, and the patience of my hearers would all fail me, and I forbear.

It only remains for me to perform a duty, which has been imposed upon me by the citizens of the place, a duty, at once, pleasing and sad.

We have been informed, (addressing himself to the speaker of the occasion) that it is your intention, to use a technical phrase, “to take up your connections with the College,” and take to yourself a new home upon the distant and opposite bank of the “Great Father of Waters.” Allow me to assure you that we have all heard of this with feelings of regret, of great, and deep regret. For a quarter of a century we have known and highly appreciated your many excellent social and civil virtues.

As a man, as a citizen, as a magistrate, we have ever found you “ready for every good word and work.” We can offer you no higher or better wishes—and this we do from the depth of our hearts—than that in your new and distant home your health, your prosperity, your happiness, may be equal to your unbounded energy, your unlimited versatility.

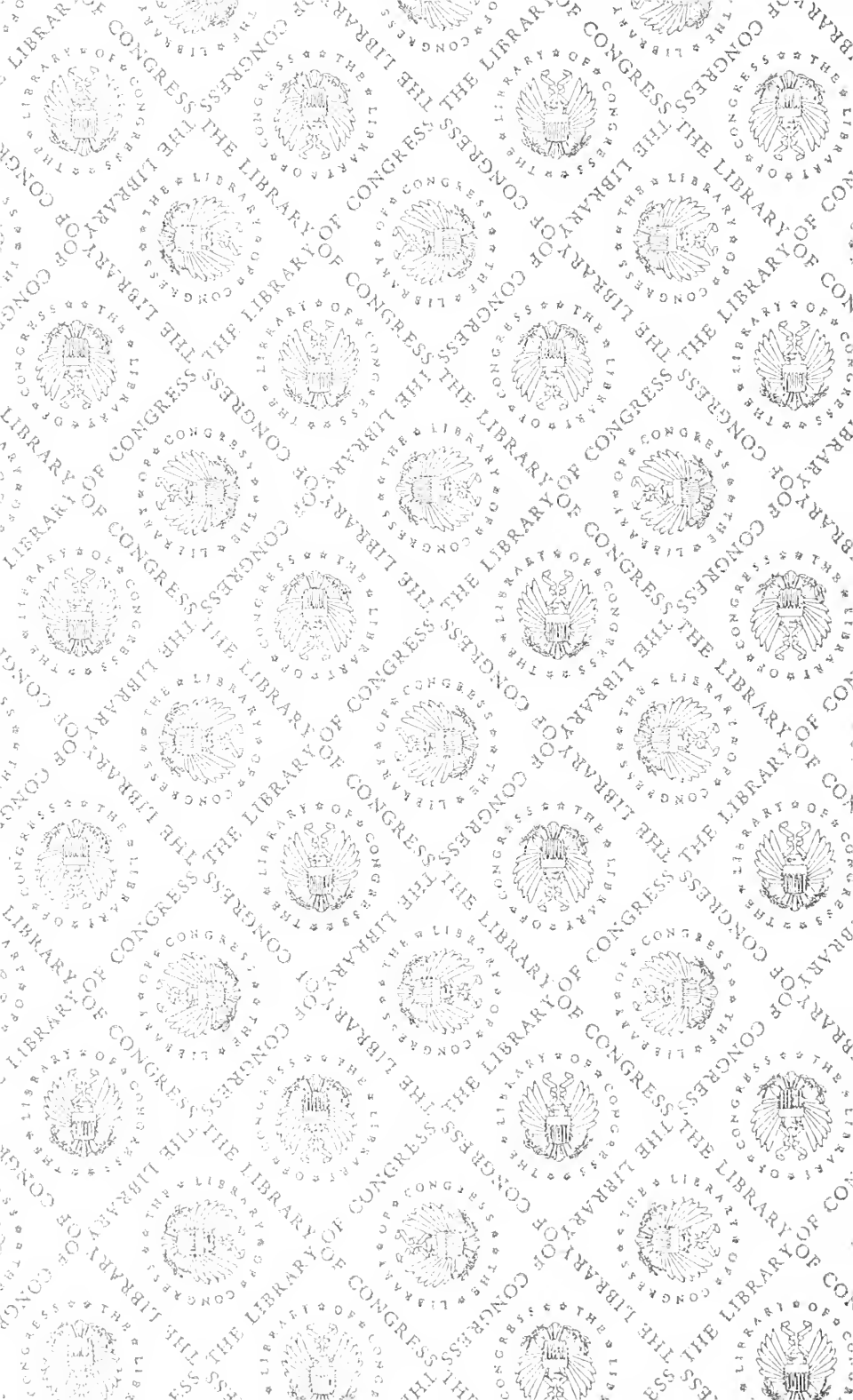
At the close of Mr. Duncan’s speech, Dr. Crosby remarked that the audience had now listened to History, Theology, Philosophy, and Law, and asked if a medical opinion was desired, to which interrogatory a decided affirmative was given. “I have then,” said he, “but a single remark to make of the old Bridge: from the violence of its convulsions and the length of time it

was dying, it must have had a strong constitution." The chairman further said :—" It is important that our Bridge should have a name. Many years since, as Mr. Duncan has told us, John Ledyard launched his self-wrought "dug-out," and took the first step in that long series of journeys which ended in making his name a household word wherever courage and perseverance are valued as they should be. The tree that was shaped into the canoe was cut a few rods north of the present Bridge. I therefore move that our new structure be christened the "Ledyard Tree Bridge."

The resolution was put, and resulted in an unanimous affirmative.

"And as it is the custom when a prince is born, to announce the fact by a salvo of artillery, I have the pleasure of informing you that the christening will be ratified by a national salute, fired by the young gentlemen connected with the Norwich University, immediately after the close of these services."

The audience then listened to another fine voluntary, performed by the Handel Society, at the close of which the meeting adjourned.



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